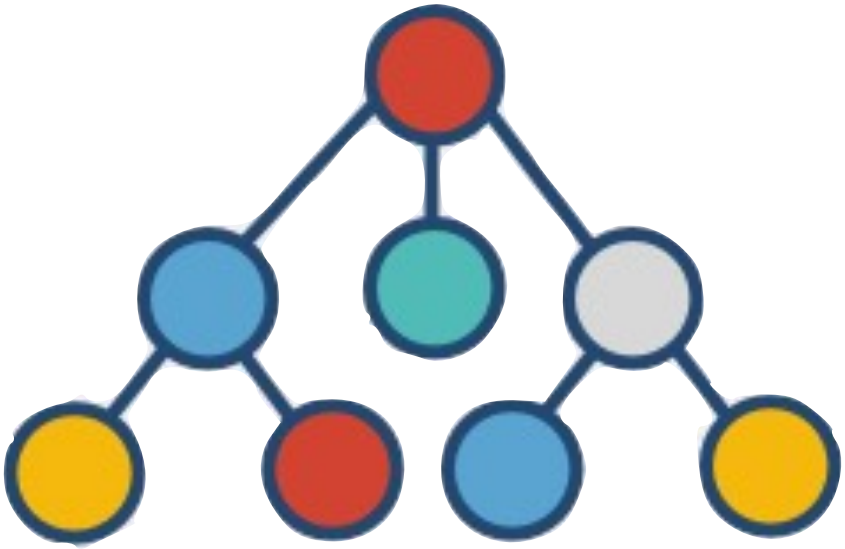
DATA STRUCTURE & ALGORITHMS

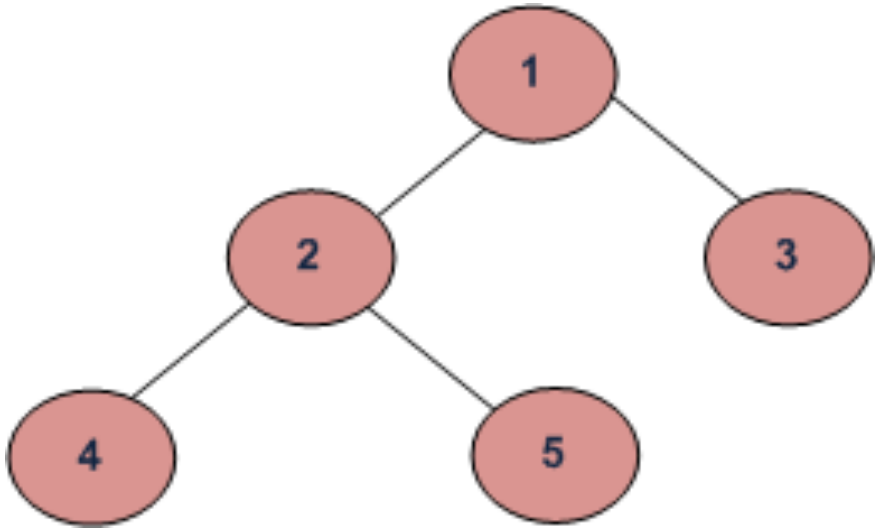


(By Prince Agarwal)

[“HELLO WORLD”]

TREE TRAVERSAL

- **TRAVERSAL OF TREE**
  - **We have Seen this**



Level Order traversal : 1 2 3 4 5 ← **Breadth First Traversals**

Inorder (Left, Root, Right) : 4 2 5 1 3

Preorder (Root, Left, Right) : 1 2 4 5 3

Postorder (Left, Right, Root) : 4 5 2 3 1

→ **Depth First Traversals**

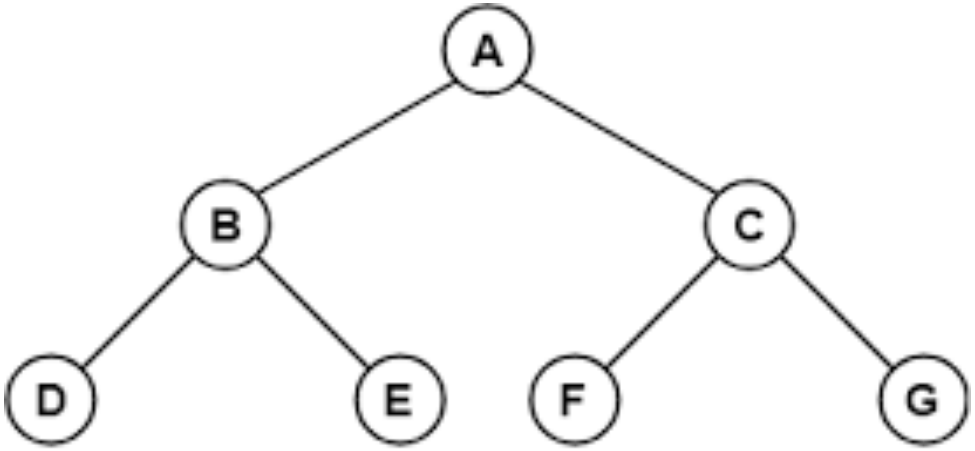
Hello world

TREE TRAVERSAL

INORDER TRAVERSAL. (LEFT. ROOT. RIGHT)

Algorithm Inorder(tree)

1. Traverse the left subtree, i.e., call Inorder(left-subtree)
2. Visit the root.
3. Traverse the right subtree, i.e., call Inorder(right-subtree)



Inorder Traversal : D , B , E , A , F , C , G

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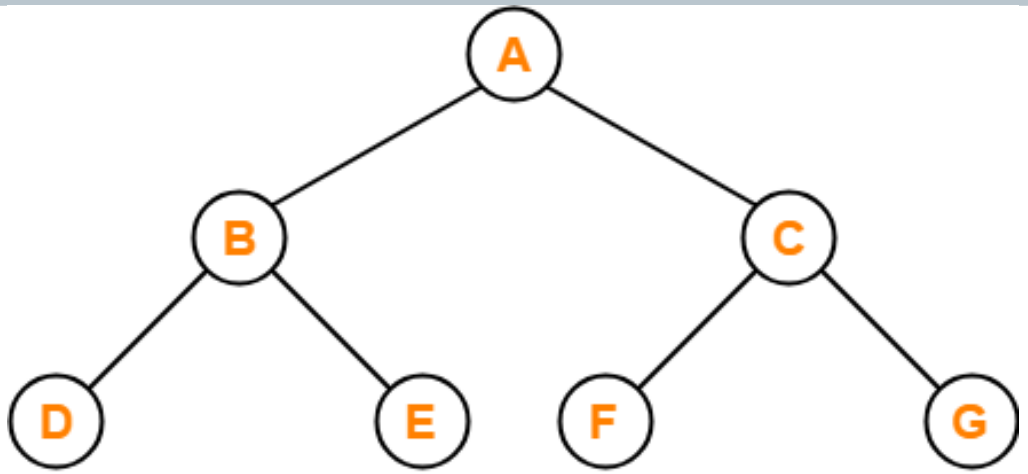
TREE TRAVERSAL

PREORDER TRAVERSAL. (ROOT LEFT RIGHT)

Algorithm Preorder(tree)

1. Visit the root.
2. Traverse the left subtree, i.e., call Preorder(left-subtree)
3. Traverse the right subtree, i.e., call Preorder(right-subtree)



Preorder Traversal : A , B , D , E , C , F , G

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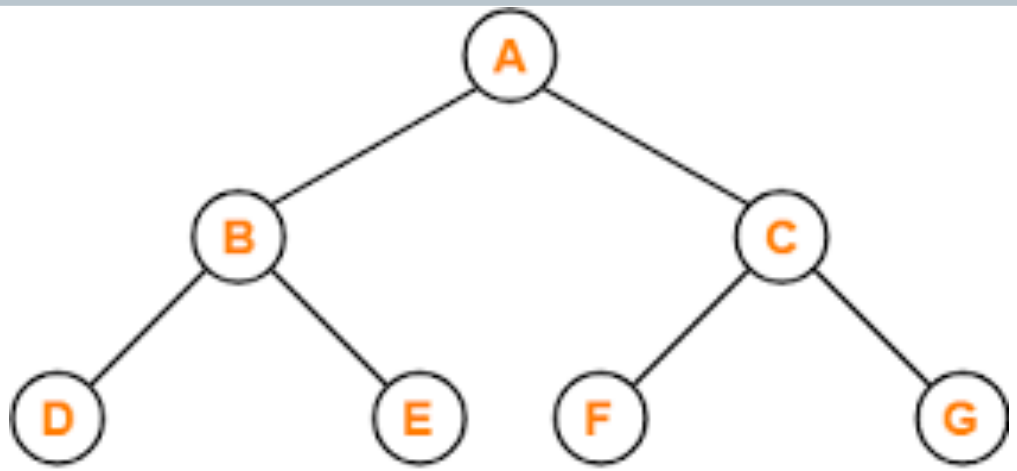
TREE TRAVERSAL

POSTORDER TRAVERSAL. (LEFT RIGHT ROOT)

Algorithm Postorder(tree)

1. Traverse the left subtree, i.e., call Postorder(left-subtree)
2. Traverse the right subtree, i.e., call Postorder(right-subtree)
3. Visit the root.



Postorder Traversal : D , E , B , F , G , C , A

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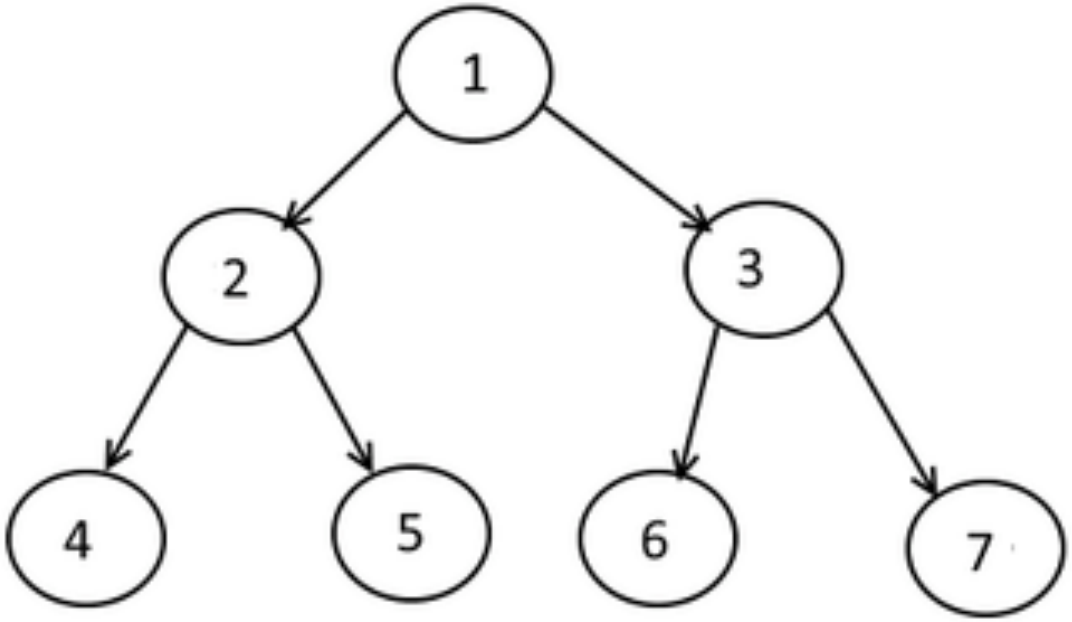
TREE TRAVERSAL

- **Examples**

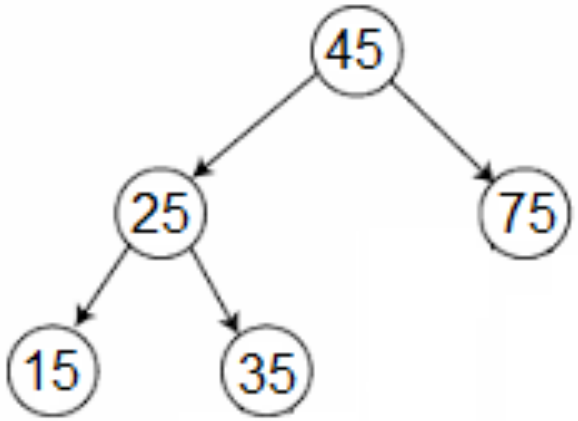


Inorder Traversal: 4 2 5 1 6 3 7

Hello world

TREE TRAVERSAL

- **Examples**



Inorder Traversal :

15 25 35 45 75

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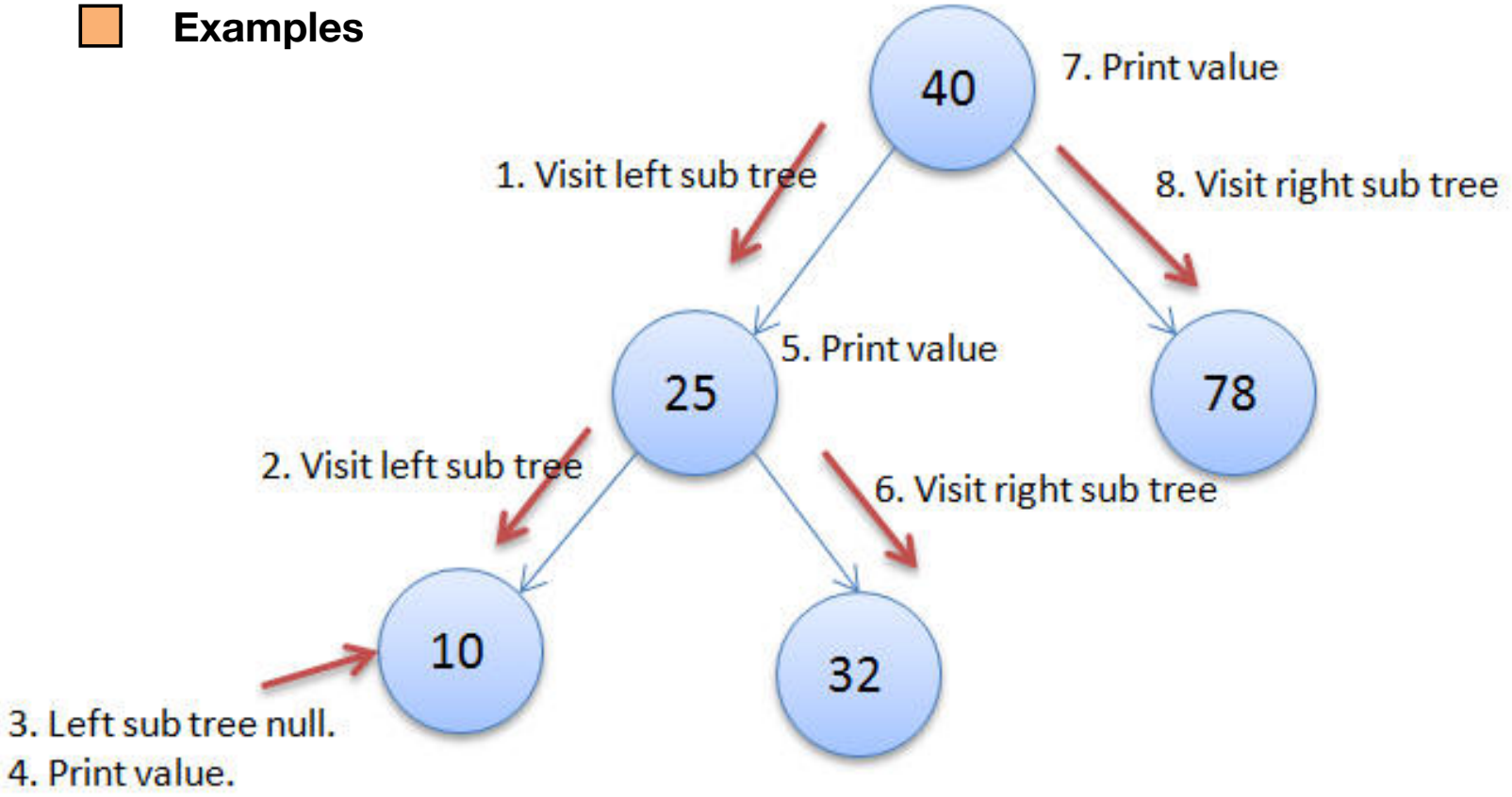
TREE TRAVERSAL

- **Examples**



The above INORDER traversal gives: **10, 25, 32, 40, 78**

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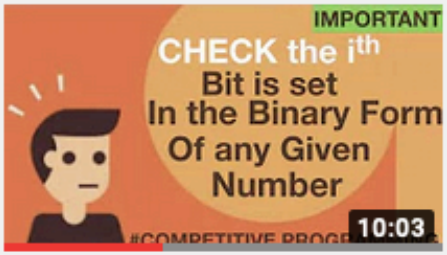

Check the ith bit is set, in the binary form of given numbe...

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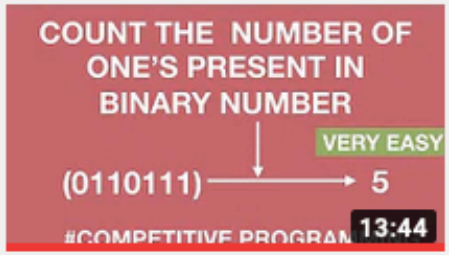

Count the number of one's in binary representation of...

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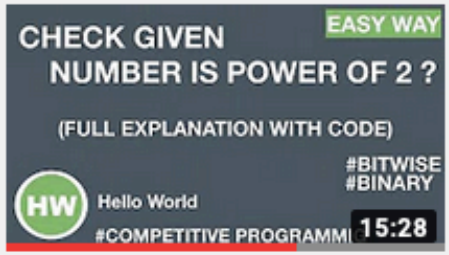

Check a given number is power of 2 | Bitwise operato...

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Left shift and right shift bitwise operator ||...

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Bitwise Operators | AND | NOT | OR | XOR || Competitiv...

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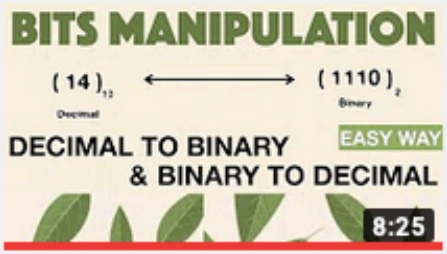

Bits Manipulation | Decimal to Binary | Binary to Decimal...

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Program of Two vs Ten Codechef - TWOVSTEN ||...

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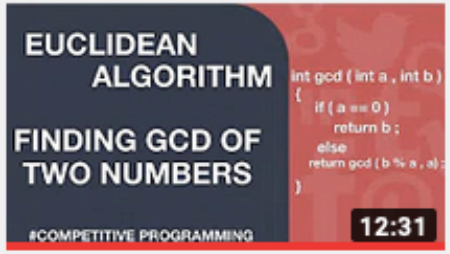

Euclidean algorithm for finding GCD of 2 numbers ||...

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